

CLAIMS

1. A method for the purification of tetrafluoro-
methane, comprising contacting tetrafluoromethane
containing one or more ethylene compounds, one or more
5 hydrocarbon compounds, carbon monoxide and/or carbon
dioxide as impurities with zeolite having an average pore
size of 3.4 to 11 Å and an Si/Al ratio of 1.5 or less
and/or a carbonaceous adsorbent having an average pore
size of 3.4 to 11 Å to reduce the amount of said
10 impurities.
2. The method as claimed in claim 1, wherein
tetrafluoromethane containing said impurities is
contacted with zeolite and/or the carbonaceous adsorbent
in a liquid phase.
- 15 3. The method as claimed in claim 1 or 2, wherein
zeolite is at least one selected from the group
consisting of MS-4A, MS-5A, MS-10X and MS-13X.
4. The method as claimed in claim 1 or 2, wherein
the carbonaceous adsorbent is Molecular Sieving Carbon 4A
20 and/or Molecular Sieving Carbon 5A.
5. The method as claimed in any one of claims 1 to
4, wherein the one or more ethylene compounds are
selected from the group consisting of ethylene,
fluoroethylene, difluoroethylene and tetrafluoroethylene.
- 25 6. The method as claimed in claim 5, wherein the
one or more ethylene compounds are ethylene and/or
tetrafluoroethylene.
7. The method as claimed in any one of claims 1 to
4, wherein the one or more hydrocarbon compounds are
30 selected from the group consisting of methane, ethane and
propane.
8. The method as claimed in claim 7, wherein the
one or more hydrocarbon compounds are methane and/or
ethane.
- 35 9. The method as claimed in any one of claims 1 to
8, wherein the total content of the one or more ethylene
compounds, the one or more hydrocarbon compounds, carbon

monoxide and carbon dioxide contained in the tetrafluoromethane is reduced to 3 ppm or less.

5 10. The method as claimed in any one of claims 1 to 9, wherein the tetrafluoromethane containing one or more ethylene compounds, one or more hydrocarbon compounds, carbon monoxide and/or carbon dioxide as impurities is produced by a direct fluorination method of reacting trifluoromethane with fluorine gas.

10 11. The method as claimed in any one of claims 1 to 9, wherein the tetrafluoromethane containing one or more ethylene compounds, one or more hydrocarbon compounds, carbon monoxide and/or carbon dioxide as impurities is produced by a direct fluorination method of reacting carbon with fluorine gas.

15 12. A tetrafluoromethane product having a purity of 99.9997 mass% or more, which is obtained by performing the purification according to the method described in any one of claims 1 to 11.

20 13. An etching gas comprising the tetrafluoromethane product described in claim 12.

14. A cleaning gas comprising the tetrafluoromethane product described in claim 12.